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IS ALOPECIA AREATA PSYCHOSOMATIC?
A Psychiatric Study.

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Alopecia areata, "one of the most baffling of dermatologic diseases" (Sulzberger and Baer, 1953) is a condition characterized by a sudden loss of hair in circumscribed patches, usually on the scalp, less often on eyebrows or eyelashes, beard, or any surface of the body. Total loss of hair of the scalp is known as alopecia totalis, and of all areas as alopecia universalis. Although most cases recover within months, the disorder often runs an intermittent or recurrent course, and may then progress to more widespread or permanent baldness. It is "relatively common" (Walker and Rothman, 1950); its incidence in dermatological practice was given by Duckworth (1863) as 2·25% of 3100 patients seen in the Dermatological Department of St. Bartholomew's Hospital; as 2·5% of 10,000 dermatological patients by Radcliffe-Crocker (1903); and as 2% of 15,000 dermatological patients by Anderson (1950). "Few diseases are simpler in symptoms, and few are freer from discomfort, and few have a better prognosis, and yet few give rise to more anxiety" (Montgomery, 1931)—and few, one may add, to more speculation regarding aetiology.

The problem of the aetiology of alopecia areata was set indirectly by Plumbe (1837) when he showed that the many varieties of "porrigo" described as distinct entities were only different stages of scalp ringworm. This left a form of circumscribed patchy baldness without evidence of inflammation or infection—Willan's porrigo decalvans, Wilson's accidental baldness, Hutchinson's alopecia circumscripta, Sabouraud's *pélade*—which to-day is called alopecia areata, a generic term adopted by Sauvage (1768) from Johnstone

(1644). "No vestige of disease is ever discoverable in this affection in the cutis of the head. . . . The hair falls off without any obvious cause . . . the dropping off of the hair is nothing more . . . than the result of a particular organic structure ceasing to perform its office" (Plumbe, *loc. cit.*).

Since then many conflicting views and theories have been advanced to account for the condition ; the toxic, endocrine, metabolic, infective (parasitic or virus), vascular, hereditary, tropho-neurotic, neuropathic, " reflex irritation " (as from eye-strain), focal sepsis, disturbed autonomic nervous function, etc. Latterly a nervous, psychoneurotic or psychosomatic theory of aetiology has been favoured, not so much based on detailed and systematic psychological investigations but rather because no organic cause has been established.

Survey of Literature.

Plumbe (1837) described " two instances in adults, where the whole of the hair dropped off in a few weeks from the scalp, eyebrows, eyelids, &c., while the individuals were suffering from great grief and ill-health ". Hutchinson (1858) reporting on a 3-years' study at the Hospital for Diseases of the Skin found " that it is not met with . . . sufficiently often in connexion with any particular group of constitutional symptoms to justify us in considering it as consequent upon any peculiar form of cachexia ". Hebra and Kaposi (1874) " from the fact that the process . . . appears suddenly, without any antecedent, visible, anatomical changes in the structure of the skin, and stops just as suddenly ", accepted " the view that alopecia areata is caused by a lesion of nerve function, which takes the form of a disturbance of nutrition (trophoneurosis) of the formation and reproduction of the hair . . . . . This supposed nerve alteration has been demonstrated clinically in a few cases ". But they left to future research by " neuro-pathologists to furnish proof how far the statements are founded on scientific fact, according to which loss of hair may arise from general nervous excitement or depression, a depressed frame of mind, intense mental employment, excesses *in Baccho et Venere*, &c." This quotation is historically interesting ; while " neurotic " is used primarily in the sense of " nerve function " and not in its modern meaning of psychoneurotic, i.e. psychological, it was secondarily carried over to mean mental and emotional events. This was possible only while dysfunction both of nerves and of mental or emotional activities was explained by the simple mechanism of either heightened nervous activity, a state of excitation, excitement or tension, or of depressed nervous activity, a state of relaxation or depression. Hutchinson (1893) thought that the appearance of the lesions alone excluded a " neurotic " aetiology : " The mode in which alopecia develops, the . . . usual absence of bi-lateral symmetry, and of any definite uni-lateral asymmetry, the rounded form of its patches, their tendency to

enlarge serpiginously, are . . . conclusive evidence as to its not being of neurotic origin ".

Sabouraud (1929) in a chapter devoted to emotional causation of alopecia found " this aetiology . . . frequently invoked by both patients and writers . . . and psychological causes blamed for alopecia. . . . In point of fact I have never seen alopecia follow a great emotion ".

Becker and Obermayer (1947) remained undecided by classing alopecia areata among the neurodermatoses due to an overactive, hypersensitive nervous system : " While many dermatologists consider that this condition is psychogenic, convincing proof is lacking ". Goldsmith and Hellier (1954) thought " the association of alopecia with some nervous shock or strain . . . too frequent to be mere coincidence. Thus a patient . . . was trapped by a tank and seriously injured ; within half an hour it was noted that his hair was coming out and within a day he was completely bald ".

A number of similar cases were reported, among others by Duckworth (1863), Pusey (1929), and Dunbar (1949). MacKenna (1927) saw " a case of alopecia areata begin in patches and very rapidly involve the whole scalp. . . . in a soldier who had been exposed to a nerve-racking bombardment in the course of which he was buried for a time. It should, however, be said that he had had a previous attack in childhood ". Sabouraud (1929) challenged the validity of the reports of sudden shock causing alopecia areata ; he stressed that the best documented were forms of alopecia other than areata, while most were based not on direct observation but on patients' own accounts and hence " more in the nature of legend than fact ". He warned : " In order to get at the truth, one must query all such reports . . . what is needed is minute precision of observed phenomena, their date and sequence. . . . From time immemorial alopecia has been the subject of studied errors ".

For Obermayer (1955) " the precipitating role of emotional tension states, fatigue, and shock is well authenticated. . . . [We] observed the presence of emotional instability in most of our patients ". However, " the doubtful validity of the psychiatric claims for alopecia areata is rendered even more tenuous by the contradictory and negative reports as to the efficacy of psychotherapy ". Referring to O'Donovan's (1927) opinion based on 15 brief case notes that " a majority of the cases of alopecia areata are psychic in their origin ", he stressed that " a much larger series of patients and adequate controls would have to be studied to prove or disprove the assumption that alopecia areata is the somatic expression of a neurosis. The disease probably represents disturbance of the autonomic nervous system, possibly with emotional factors contributing thereto ".

Anderson (1950) in a study of 114 cases found the " commonest precipitating cause . . . to be mental shock or acute anxiety. . . . In 27 cases (23%) the alopecia had been preceded by some form of mental stress ", and a " further

26 cases were obviously suffering from various degrees and forms of mental disturbance, or what the patients themselves called 'nerves' ". He concluded that the aetiology remained unknown and that it " could be either a disease of adaptation or possibly a virus disease ". Sulzberger and Baer (1951) commented that this study " confirms many clinical impressions, including the importance of mental shock in precipitating attacks in numerous cases ".

As a result of a psychiatric investigation, Hingston (1939) suggested albeit " tentatively . . . that alopecia areata is a psychosomatic reaction in certain personality types expressing anxiety ". She found " in our series of cases . . . psychogenic precipitating causes in all except two "—but unfortunately did not state the number investigated. Yet against this " the majority of the patients had excellent occupational records and were good workers; this was very noticeable in comparison with other groups . . . treated at the Nervous Clinic" although many gave a history of "hereditary instability and neurotic traits in childhood ". She concluded " that this overwhelming nervous factor has not been estimated at its full value ". Obermayer and Bowen's (1956) experience, on the other hand, was that in children with alopecia areata " only a small proportion " showed " definite emotional disturbances ".

Of Irwin's (1953) 55 patients, 63% fell into a " neurotic group in whom alopecia was accompanied by a sufficiently severe degree of psychoneurosis to warrant psychiatric treatment even in the absence of alopecia "; 23% into a " traumatic group . . . in whom alopecia appeared to have been precipitated by an event which caused sudden acute emotional distress, usually anxiety "; and 14% into a " negative group . . . in whom there was no psychiatric disability and whose alopecia *did not appear* to have been emotionally precipitated ". He found " The most striking feature of the male patients . . . was their lack of drive. This permeated the total personality, affecting social relations, work, sexuality, and aggression. . . . The female patients . . . were socially, emotionally, and sexually inhibited. . . . In both male and female patients psychoneurotic difficulties often long antedated the onset of alopecia ".

Greenberg (1955) remarked on the paucity of psychiatric studies of alopecia and reported on 44 patients: " Classified according to psychiatric diagnosis 32 (72%) were psychoneurotic, 4 (9%) were borderline psychotics, 4 (9%) were schizophrenic, and 1 (2%) had involutional psychosis. Only three patients, 7% of the total, were free of mental illness ". His findings contradicted Irwin's in that patients did not conform to a single personality type although " many of them tended to be shy, withdrawn and passive. . . . Depression or anxiety or both were frequently prominent. In the great majority . . . long-standing mental and emotional disturbance preceded the onset of alopecia".

As " The role of acute emotional stress as a precipitating factor . . . is difficult to evaluate. . . . It is suggested that heretofore undue emphasis has been placed upon the acute disturbance and not enough on the long-standing problem of these patients ".

In summary, despite scanty evidence, alopecia areata is to-day widely held to be psychogenic. It is rare to see a patient who has not been told that his condition is due to " nerves ". The few published psychiatric studies seem to set out to confirm a preconceived psychological origin rather than to explore the possibility of it. As in many patients no emotional trauma preceding the attack was found, authors have tended to fall back on supposed personality types, long-standing life difficulties or childhood factors, without linking these in any way with the outbreak of alopecia. The most comprehensive investigations including psychological aspects—as those by Hutchinson (1858, 1893)—are now rarely, and in the psychiatric literature never referred to, perhaps because like Sabouraud they do not support a psychosomatic aetiology. Psychological theories, such as those expressed by Irwin—" unconscious abandonment of the symbols of masculine aggressiveness as a defence against powerful, repressed, destructive tendencies . . . unconscious abandonment of the ' crowning glory ' as a defence against sexual temptation "—need not be taken seriously, if for no other reason than that they explain neither loss of hair in places other than on the head, nor cases of alopecia in the younger or older age groups, nor its occurrence in mental defectives of the lowest grade.

The Problem.

What evidence can be adduced for or against psychological factors playing a causative or precipitating role in alopecia areata ? Can the traditional view that emotional shock or trauma is causative be substantiated—in other words is alopecia a psychosomatic disorder ? It is of course well known that psychological factors can influence any organic illness for better or for worse, but in order to justify its being labelled psychosomatic it must be shown that emotional or psychological factors play the initiating role. Otherwise the term psychosomatic will be extended so far that ultimately no organic disease will escape being labelled psychosomatic, and no advance be made in diagnosis, prognosis or therapy. The assessment of psychological factors in the production of alopecia areata is peculiarly difficult, partly because of its natural history—sudden onset, at times equally rapid improvement or aggravation and recurrence, partly because of its striking and disfiguring physical effects and consequent severe psychological repercussions. By the time the patient is psychologically examined, he or she may well be depressed, anxious, nervous, irritable, self-conscious, and shun society as a " normal " reaction. One must therefore guard against mistaking the effect for the cause. Further, it is

scientifically unsound, even if psychological symptoms or indeed mental illness is present, to assume a causal link between them on no more precise evidence. In doubtful " psychosomatic " conditions additional evidence may legitimately be drawn from response to psychotherapy. But here again in a condition so apt to self-cure or recurrence and with no reliable clinical criteria for prognosis in a given case, no such evidence is likely to carry weight, and indeed no reports on the results of psychotherapy in alopecia have been published.

Material.

Here we report on 125 unselected patients seen over a 7-years' period and investigated with special reference to the possible influence of psychological factors in causing the condition. Of these 48 (38%) were male and 77 (62%) female ; their ages ranged from 3 to 62 years. One hundred (80%) had simple alopecia areata, 14 (11%) alopecia totalis and 11 (9%) universalis. In Table I patients are classified according to age, sex, and type of alopecia. In some the condition progressed from alopecia areata to totalis or universalis while under observation, and in others alopecia totalis regressed to alopecia areata. These patients have been entered once only in the category of the most severe stage.

Table I.—*Age and Sex of* 125 *Patients by Type of Alopecia.*

	Age groups.																					
	0–9.			10–19.			20–29.			30–39.			40–49.			50 and over.			Totals.		
Type of alopecia—	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Tota
areata . .	3	2	5	4	5	9	11	20	31	11	16	27	10	11	21	2	5	7	41	59	10(
totalis or universalis	0	0	0	0	6	6	1	5	6	2	5	7	4	2	6	0	0	0	7	18	2
Totals .	3	2	5	4	11	15	12	25	37	13	21	34	14	13	27	2	5	7	48	77	12

Sex incidence.—It is general experience that alopecia areata occurs equally often among men and women (Hutchinson, 1858, 1863 ; Sabouraud, 1929 ; Walker and Rothman, 1950), although occasionally a slight preponderance of women has been reported. Our preponderance of 62% women to 38% men cannot be accounted for other than by chance selection, except perhaps that more women attended in order to obtain wigs.

Age incidence.—Alopecia areata is a disease of early adult life, relatively few cases occurring within the first years of life and very few in old age. The highest incidence is in the second and the third decades, with another slight peak at the menopause. In our series 5 (4%) of patients were less than 10 years old ; 52 (42%) in the age group 10 to 29 ; and 68 (54%) over 30. This apparent preponderance of higher age groups may be related to the fact that patients were seen at a teaching hospital and therefore tended to be selected by chronicity or severity ; grouped by age at first onset (Table II) the age

distribution was shifted towards the earlier years and approximated that of Walker's and Rothman's series. Of course, age at first onset is of particular importance in a psychological investigation in order to assess accurately all possible influences bearing on the first attack.

TABLE II.—*Age Incidence.*

Age.	0–9.	10–19.	20–29.	30–39.	40–49.	50 and over.	Total.
ge when first seen	5 (4%)	15 (12%)	37 (30%)	34 (27%)	27 (22%)	7 (6%)	125 (100%)
ge at first attack	17 (14%)	25 (20%)	40 (32%)	24 (19%)	16 (13%)	3 (2%)	125 (100%)
'alker and Roth-man	— (22·6%)	— (24·3%)	— (17·4%)	— (20%)	— (9·6%)	— (6·1%)	— (100%)

Associated conditions, past and present.—Significant events in patients' past medical history as well as concurrent conditions were noted as possibly influencing the development of alopecia. Fourteen (11%) had suffered from other dermatological conditions as follows : Seborrhoeic dermatitis, 3 ; lichen planus, 3 ; neurodermatitis, 2 ; and one patient each from rosacea, contact dermatitis, hyperidrosis, and cheiropompholyx. Two patients also had vitiligo, a condition Anderson (1950) found in 4% of his series and which Sabouraud (1929) linked with alopecia areata : " While it is rarer than alopecia, the whiteness of growing hair in alopecia shows some connection between the two conditions, and in rare cases there seems to be an intimate connection. One may speculate that he who finds the cause of alopecia will also have come close to the cause of the mechanism of vitiligo ".

Six (5%) patients had suffered from other illnesses : one each from gross obesity, diverticulitis, peptic ulcer, pernicious anaemia, tuberculosis, and thyrotoxicosis.

Five (4%) patients had had major operations such as hysterectomy and thyroidectomy. Thirteen (10%) gave a history of recurrent infection, 8 of the upper respiratory tract resulting in tonsillectomy or mastoidectomy.

In 3 patients alopecia areata followed the stitching of a scalp wound.

Pregnancy and alopecia.—A relationship between pregnancy and alopecia areata has been noted by many observers, pregnancy either relieving or precipitating an attack. In our series 7 (9%) of 77 female patients gave such a history. In 6, alopecia areata followed childbirth, and in one case, two attacks of alopecia occurred only during two pregnancies with subsequent recovery. One patient had recurrent attacks of alopecia areata after her first, second and third pregnancies and presented with alopecia totalis ; one with a similar history presented with alopecia universalis ; one had alopecia areata following the third pregnancy only ; another developed alopecia areata after the birth of her second child but not after the first or after a subsequent miscarriage ; one developed alopecia areata after the birth of her only child but had had a previous attack aged 9.

Familial incidence.—Twelve (10%) patients—6 males and 6 females all suffering from alopecia areata—gave a history of alopecia areata in another member of the family. In 10 the father had been affected prior to the onset of the patient's alopecia ; in one, father and daughter were affected simultaneously ; a boy aged 3 with alopecia areata had a mother suffering from alopecia universalis ; and in one patient a sibling had been affected in the past.

A positive family history in only 10% of patients is low compared with Anderson's (1950) figure of 19%. Sabouraud (1929) found a positive family history in 22% of his patients. This he regarded as unduly low because of the unreliability of data furnished by patients, and because slight attacks of alopecia areata may remain unnoticed ; this may be especially so when patches occur on the extremities, a point stressed by Robinson (1883), who discovered such patches accidentally while examining patients for other conditions.

Psychiatric Status.

As we are concerned with assessing degrees of psychiatric disturbance if any, past or present, rather than with identifying types of mental illness—in any case arbitrarily isolated, based on no precise diagnostic criteria and so largely determined by the psychiatrist's bias—it was felt that our findings would be best represented by classifying patients' psychiatric status as follows :

Group I—No abnormality	Male 34 ; female 50 = 84 (67%).
Group II—Mild psychiatric disturbance qualifying for the label " neurosis " .	Male 8 ; female 19 = 27 (22%).
Group III—Severe psychiatric disturbance qualifying for the label " psychosis " past or present .	Male 6 ; female 8 = 14 (11%).

Six (5%) patients gave a history of mental shock to which their alopecia had been attributed. On examination no psychiatric abnormality was discovered and they are therefore listed in Group I and will be discussed separately. In Group II are listed patients who in the absence of serious mental symptoms complained of anxiety, mild depression, lack of energy, self-consciousness, social difficulties, and the like. In Group III, 2 patients had been to mental hospitals for varying periods, one had had psychiatric treatment for severe depression, 2 had made suicidal attempts but did not appear severely disturbed at interview, one was a chronic paranoid schizophrenic never hospitalized, and the remaining 8 suffered from various delusions or hallucinations which were unobtrusive and only revealed in subsequent interviews ; they might easily have escaped notice had patients been seen only once or by a non-psychiatrist. For instance, a girl of 20 had repeatedly changed jobs in obedience to voices from heaven, and a man of 43 attributed his alopecia to the antagonism of neighbours who had long bombarded him with atomic rays.

If psychological factors play a significant aetiological role the highest incidence of mental disturbance may be expected in the severest forms of alopecia, if only because they usually result from repeated attacks. In Table III, type of alopecia is correlated with degree of mental disturbance ; in both types the largest percentage of patients fell into Group I and the lowest into Group III. But a greater proportion (36%) of patients with alopecia totalis or universalis were mildly disturbed (Group II) than those with alopecia areata (18%). To establish whether this is significant in showing that psychological factors are important, we further compared the duration of attacks of alopecia (Table IV) and the number of attacks (Table V) with degree of mental disturbance. Here there was no significant correlation ; an almost equal proportion of patients in Groups II (11%) and III (14%) had had attacks lasting 5 years and more, and the number of attacks of alopecia bore no relation to degree of mental disturbance. The somewhat higher incidence of mild mental disturbance in patients with the severer forms of alopecia shown in Table III may therefore be due either to chance or to other factors such as the increased liability to social embarrassment and isolation of severe alopecia ; it may therefore be regarded as more in the nature of effect than cause.

TABLE III.—*Extent of Alopecia in Relation to Psychiatric Status.*

	Group I.	Group II.	Group III.	Totals.
A. areata	72 (72%)	18 (18%)	10 (10%)	100 (100%)
A. totalis or universalis	12 (48%)	9 (36%)	4 (16%)	25 (100%)
Totals	84	27	14	125

TABLE IV.—*Duration of Presenting Attack in Relation to Psychiatric Status.*

Duration of presenting attack of alopecia.	Group I.	Group II.	Group III.
Under 1 year	37 (44%)	17 (63%)	5 (36%)
1–4 years	27 (32%)	7 (26%)	7 (50%)
5 years and over	20 (24%)	3 (11%)	2 (14%)
Total	84 (100%)	27 (100%)	14 (100%)

TABLE V.—*Number of Attacks of Alopecia in Relation to Psychiatric Status.*

Number of previous attacks.	Group I.	Group II.	Group III.
None	35	10	6
1	16	9	4
2	20	5	2
3	10	3	1
4 or more	3	—	1

Finally, in the 14 patients of Group III past histories were closely examined to see whether attacks of alopecia coincided in time with the onset of severe

mental illness. This was considered more satisfactory than correlating the onset of alopecia with the development of milder psychiatric disturbances because these tend to be chronic and it is usually impossible to fix their onset or remission precisely. Only one patient gave a clear-cut history of alopecia developing at the time of mental breakdown with subsequent remission of both. Six patients had had episodes described as nervous breakdowns or periods in mental hospitals, 2, 3, 4, 10, 14 and 20 years respectively prior to their first attack of alopecia ; 3 patients who gave a history of alopecia developing during the time of mental breakdown were found on close questioning to have had previous attacks of alopecia without concurrent mental disturbance ; one patient who suffered from alopecia areata during a mental breakdown recovered from both maladies but had a second attack of alopecia 17 years later without psychiatric disturbance ; one patient had had an attack of alopecia 10 years before a mental breakdown and a second 2 years after recovery from a similar episode ; in 2 patients alopecia persisted unchanged throughout the onset, duration and remission of mental illness.

Mental trauma.—Six patients gave histories of mental or emotional trauma to which their alopecia had been attributed. However, careful questioning revealed the following details :

Case 1.—A girl aged 13. When aged 3 she witnessed a severe accident involving her mother, and this was followed by a patch of alopecia 3 months later ; since then she has had 4 further attacks, once progressing to totalis and once to universalis, without apparent cause.

Case 2.—A woman aged 32. Alopecia began 4 days after her only child developed poliomyelitis ; there was a remission, and no alopecia followed her husband's accidental death one year later.

Case 3.—A woman aged 33. Alopecia was said to have developed 2 days after the sudden death of her mother. Her husband however later said that she had had 2 patches of alopecia persisting for 10 years which she had not thought worth mentioning because they could be covered by her remaining hair.

Case 4.—A woman aged 45. She attributed alopecia to the shock of losing her job. She had had two previous attacks when aged 20–30. There was no recurrence when she later found her son dead with his head in the gas oven.

Case 5.—A man aged 42. He attributed his alopecia to the shock of his mother's sudden death 3 months previously. Before this he had 6 years' active service in the Royal Navy without alopecia. A second attack 2 years later came without apparent cause.

Case 6.—A man aged 48. Alopecia was noticed 6 weeks after injury in a train crash. He had served in the Burma Campaign without alopecia. A previous attack of alopecia at the age of 16 had no apparent cause.

Controls.—It might be considered desirable to attempt to establish whether patients with alopecia had a higher incidence of mental disturbance than the general population. However, this is not feasible while neither the incidence of alopecia nor that of mental disturbance in the general population is known. Furthermore, the presence of alopecia may itself influence the mental state.

It would be equally unsatisfactory to use a control group of, say, surgical patients, not only because these are not usually subjected to close psychiatric scrutiny, but also because surgical interference might precipitate an attack of alopecia. Even if all these difficulties could be overcome, there remains the fact that one would not expect every disturbed patient to react to psychological upset with alopecia and in no other way. For these reasons we thought it methodologically more sound to eliminate these unknown variables and to use our alopecia patients as their own controls. This was done by noting all times of episodes or periods of mental stress and then correlating these with times of onset of attacks of alopecia. It was found that episodes of stress by no means coincided with or were followed by attacks of alopecia ; those which might have been pathogenic were not followed by attacks, and when alopecia was established it was not significantly influenced by either amelioration or development of mental stress. Where patients gave a history of mental stress preceding an attack of alopecia, close scrutiny of their lives both before and after revealed many other situations of equal or greater stress which had not been followed by alopecia. An example shows best the kind of evidence so gained :

A girl of 21 developed alopecia areata which was attributed to the anxiety caused by leaving home to go to college. At interview it was found that she had had repeated attacks of alopecia since aged eight while a happy undisturbed child. She was not really anxious about leaving home but on the contrary keen to go to college ; and the greater strain of examinations in the previous months had not produced an attack of alopecia. Followed up 2 years later she had finished the course and obtained an excellent job yet her alopecia had become so widespread that she had to wear a wig.

Response to Psychotherapy.

Thirty-five patients who showed some degree of psychiatric disturbance were treated by psychotherapy. Although many improved, both in their attitude to themselves and their social relations, in none was the alopecia influenced in any way. Indeed, in those who showed the greatest psychiatric improvement the alopecia progressed unchecked, while others who were not disturbed and did not need psychotherapeutic help regrew their hair or relapsed while under observation.

This is not to say that psychotherapeutic help is not beneficial to these patients ; on the contrary we found that they were often greatly helped to overcome the anxiety and depression caused by their baldness by one or two psychotherapeutic sessions. Many had been made more despondent by being told that it was a nervous complaint ; they had interpreted this either as implying that they had brought it on themselves or that they were mentally ill without knowing it. A number improved simply by being taken off sedatives and tranquillizers which had been prescribed on the *a priori* assumption that

alopecia is psychiatrically determined—although it is hard to see why sedation should be regarded as a cure for psychological ills.

Discussion.

The main difficulty in assessing the importance of psychological factors in the aetiology of alopecia areata is that neither the general incidence of alopecia nor that of mental disturbance, mild or severe, is known. Further, in no other field of medicine is there so much variance in diagnosis as in psychiatry and so much room for individual bias ; many psychiatric labels such as stress disease, immaturity, emotional instability, dependency, neuro-circulatory instability, etc., have no objective connotation. Only on these grounds can one explain the very different incidence of " neurosis " and " psychosis " in the series of Greenberg (1955) and Irwin (1953), or the absence thereof in Hingston's (1939) patients. Other observers do not attempt to differentiate between mildly and seriously disturbed patients, but use only such omnibus terms as " anxiety states " or " stress disease ". Such terminology is most frequent in the contributions of non-psychiatrists, and in them allowance must be made for the observer being unduly impressed by overtly displayed mental symptoms such as anxiety and depression while ignoring the more serious mental states which require psychiatric skill to discover. Further, it has been shown that patients with alopecia may present as anxious and depressed as a reaction to loss of hair ; in them anxiety and depression are neither the concurrent nor the cause, but psychiatrically speaking they are a reactive consequence of the loss of hair. It must also be remembered that patients are sometimes only too ready to accept their doctor's explanation of their illness, in other words are suggestible. Therefore patients' accounts may be coloured not only by popular beliefs and contemporary medical emphasis on psychological factors, but also by such inviting questions as " Have you any worries ? " Again, it is insufficient to subject the period immediately preceding one attack of alopecia to psychological scrutiny ; such investigation must cover as far as possible the patient's previous history and should be extended to follow-up studies. The presenting attack alone is apt to produce a one-sided view in a disorder essentially recurrent : Walker and Rothman (1950) found a recurrence rate of 86% in 230 patients over 14·2 years, and of 100% over 20 years and longer.

Finally, from a purely theoretical point of view alopecia areata is unlikely to be psychosomatic because bodily symptoms originating in the mind cause dysfunction or dysaesthesiae, that is to say patients have symptoms without necessarily displaying objective signs. Alopecia on the other hand is characterized by the sign of patchy loss of hair in the absence of any disturbance of sensation—the very reason why it is often accidentally discovered, and the onset of an attack difficult to determine accurately.

Mental shock and trauma.—The single case reports in the literature in which alopecia has followed mental shock or trauma usually describe incidents which were accompanied by physical disease, accident or injury, such as being struck by lightning ; Plumbe's (1837) patient suffered from " great grief and ill-health ". Yet while the aetiology of alopecia remains unknown these cases cannot be evaluated solely in terms of their mental factors, disregarding the concomitant organic pathology. Sabouraud (1929) rejected mental shock or trauma as a cause of alopecia areata on the grounds that it is impossible to accept that alopecia can develop within hours ; " allowance must be made for a necessary interval in which the hair follicle perishes for the shedding of hair to occur . . . even the most drastic epilation—by X-rays—takes 13–15 days to take effect ". He stressed the unreliability of patients' accounts, and added that some of the reported cases were not of alopecia areata but clinically a different type of defluvium such as follows infections. He exemplified this by the case of a girl who started to lose her hair 13 days after a road accident and became completely bald ; she regrew her hair in the same way as happens in the defluvium following infections.

In our six cases the time factor alone—one day to three months—contradicts the possibility that their alopecia was due to mental shock. Reports of traumatic alopecia often do not mention patients' previous history in which an earlier attack of alopecia may have occurred, a point brought out by MacKenna (1927) when he added to his account of a case of alopecia following shock : " It should however be said that he had had a previous attack in childhood ". How unreliable patients' statements are when they are convinced that shock is the cause of their loss of hair, was shown by one of our patients who had not thought it worth while mentioning that for ten years she had had two bald patches to which was added the third following a " shock " which brought her to the hospital.

World Wars I and II provided a vast opportunity for observing the effects of acute anxiety and shock. But to our knowledge no increase of alopecia areata was reported either from the Forces or civilian population of any country.

Alopecia areata in mental defectives.—The occurrence of alopecia areata in mental defectives also contradicts any significant aetiological role of psychological factors or mental trauma. The incidence of alopecia areata among mental defectives in 3 colonies was 0·4% in a total population of 3220. Possibly this is an even higher incidence of alopecia areata than in the general population, judging from the fact that only 2% of dermatological patients suffer from the condition. It is safe to discount the operation of psychological factors and mental trauma in mental defectives—many classed as idiots—living in the unchanging routine of a colony.

Conclusion and Summary.

An investigation of 125 cases of alopecia areata including 25 of alopecia totalis and universalis produced no evidence for the widely held view that psychological factors—mental illness, anxiety or mental shock—play a significant part in causing or precipitating the disorder. These clinical findings are supported by the fact that alopecia occurs in the lowest-grade mental defectives living in the constant milieu of colonies. Although our findings are mainly negative, a survey of our patients' histories for mental stress which did not precipitate an attack of alopecia areata seems to justify the more positive statement that it is unlikely that mental stress plays an important part. Yet much may be done psychotherapeutically to help patients adjust to their condition. Our conclusions may best be expressed in Hutchinson's (1893) words, written forty years after he had started his first intensive study of alopecia areata : " The entire absence of any form of ill-health in the subjects of alopecia areata induces me to put wholly aside any inquiry on that score. We may, I think, entertain absolute incredulity as to what is called the neurotic form of this disease. It attacks young people more frequently than others, and they are usually those in whom neither headache nor any species of neurotic disturbance has been observed. It does not appear to me to be worth while in such a malady to ask an adult patient as to overwork, mental worry, and the like. Such influences may be found, if sought for, in the majority of those who consult us, and I feel very certain that when they chance to be coincident with alopecia they do not stand to it in the relation of cause ".

I am greatly indebted to Dr. R. M. B. MacKenna, in whose Department this investigation was undertaken, for his constant interest and encouragement, and for his advice on the presentation of the material. I thank Dr. John Gibson of St. Lawrence's Hospital, Caterham, and Dr. Michael Craft of The Royal Institution, Starcross, for ascertaining for me the number of cases of alopecia areata among the mental defectives at those hospitals.

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HAEMANGIO-ENDOTHELIOMA (ANGIOPLASTIC SARCOMA).

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MALIGNANT vascular tumours of the skin are exceedingly rare, and most of them appear to belong to the group of so-called haemangio-endotheliomata. Because of its rarity and of the disagreement about the nomenclature of these angioplastic growths the description and discussion of another case seems justifiable.

CASE REPORT.

A woman aged 62 sought medical advice for a lesion in the right fronto-parietal region of the scalp (18 : vi : 1955). It was a slightly elevated dull bluish-red tumour, measuring nearly 6 cm. in diameter, having a rough surface with some protruding nodules. Over the tumour there was slight loss of hair.

The lesion was first noticed by the patient six weeks previously and it was slowly increasing by peripheral extension. She was not aware of any related trauma preceding its appearance. Pain was absent. She gave a history of having had sciatica in 1953, a commotio cerebri in 1952 and for the preceding sixteen years she had had diabetes mellitus.

Physical examination revealed no other finding of note; blood count was normal, Hb 81%. E.S.R., serological reactions for syphilis and urine analysis were normal, except for glycosuria.

A punch biopsy was taken from the skin tumour and histological examination showed masses of spindle cells and the formation of many small and large vascular sinuses. The diagnosis of haemangio-endothelioma was made.

About two weeks after our first examination some small palpable lymph nodes appeared in the neck below the angle of the right jaw, and the lid of the right eye became swollen. One of these lymph nodes was removed and the histopathological findings were also interpreted as haemangio-endothelioma.

Beginning on 22 July the patient was given x-ray treatment to the right fronto-parietal region and the neck below the right ear, at the out-patient department of radiology (Dr. P. J. L. Scholte). Daily exposures were given, using 150 kV., 4 Al, 19 mA, F.S.D. 40 cm., 150 r, total 2000 r. After this the lymph nodes subsided and the tumour became much flatter, only a slight purplish spot being left.

At the end of August 1955 however the patient had to be admitted to hospital because of severe pain in the back. Skiagrams showed partial collapse of the seventh thoracic vertebra, and spotty opacities in the chest which were considered to be due to secondary malignant growths. Similar skiagrams, two months previously, had shown no abnormality. The results of other examinations were the same as before. At this time the primary tumour began again to extend progressively and radiotherapy was repeated (daily 200 r, a total of 1500 r, using 200 kV.), this time however without any favourable result. Bleeding from the tumour occurred frequently after this treatment and the surface became covered with thick brownish-red crusts.

The patient's condition rapidly declined further, with intense pain in the back and attacks of vomiting. Six weeks after her admission to the hospital a large num-

ber of spontaneous skin haemorrhages appeared on the trunk and legs. Blood analysis revealed a severe thrombocytopenia (42,000) and in spite of blood transfusions, the patient died on 24 : x : 1955.

Post-mortem Examination.

The skin tumour measured about 8 × 6 cm. The underlying bone of the skull was normal. The skin showed multiple subcutaneous haemorrhages, varying from petechiae to ecchymoses, situated chiefly on the legs and the trunk.

In both lungs and in the liver, spleen and lumbothoracic spine several friable, greyish-white and dark red nodules were present, each about 1 to 3 cm. in diameter.

The lymph nodes of the lung hilum were enlarged. In the liver some of the dark red areas resembled the common type of cavernous haemangiona.

The seventh thoracic vertebra showed almost complete replacement of the body by soft haemorrhagic tissue which had caused its collapse.

The other organs showed no abnormalities, but the brain was not examined.

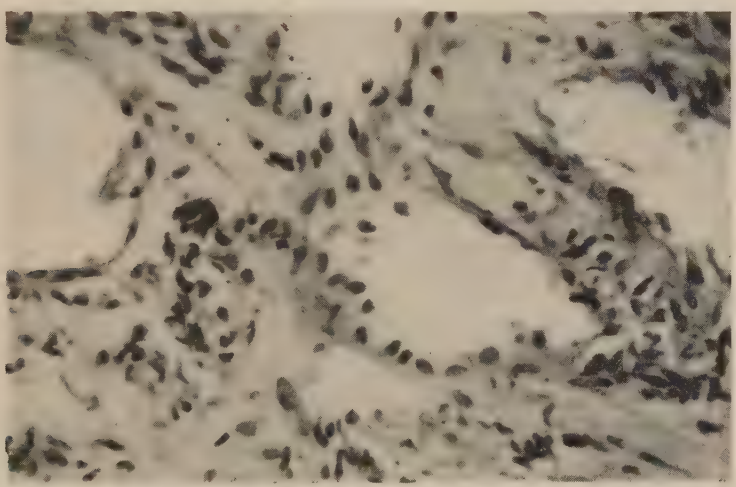

FIG. 1.—High power photomicrograph (skin tumour) showing the presence of different cell forms side by side in the wall of the same lumen.

Histopathology.

Punch biopsy from the skin tumour.—The epidermis showed no change except a flattening of the papillae. The upper part of the corium was poorly stained and showed loose fibrous connective tissue with only a few nuclei. In the deeper parts were masses of chiefly spindle-shaped and polyhedral cells, having clear cytoplasm and a small, pale, vesicular nucleus with one or more minute nucleoli. Deeper stained nuclei were also frequently seen. In some places the cells formed cords and clumps which seemed to invade the superficial part of the corium.

The most striking feature was the presence of a great number of small and large sinuses, mostly in the upper part of the corium. The lining of these sinuses consisted of cells arranged in one or more layers, the cell types varying from flat endothelial to spindle-shaped, the latter similar to the tumour cells. Both cell types were often present side by side in the wall of one lumen and intermediate forms between the two types of cell were not unusual (Fig. 1). Blood cells were not observed in these

lumina. Normal pre-existing capillaries were scarce. In some places the lumina intercommunicated to form an extensive network and in places large sinuses were thus formed (Fig. 2). Careful examination revealed cytoplasmic connections

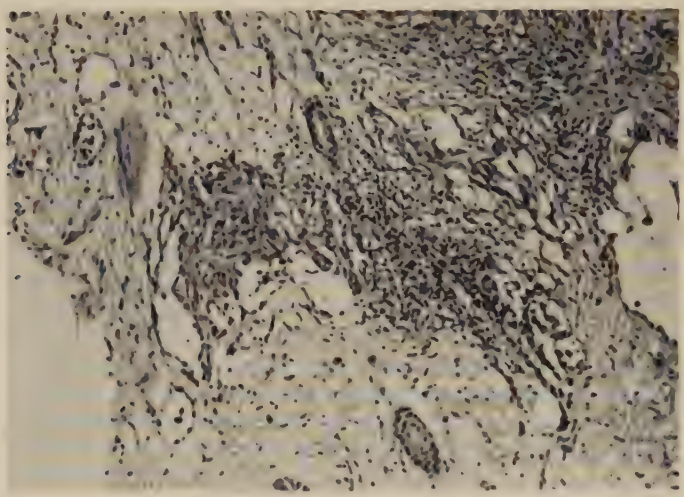

Fig. 2.—A tumour cell mass in the corium. The tumour cells form networks from which lumina arise.

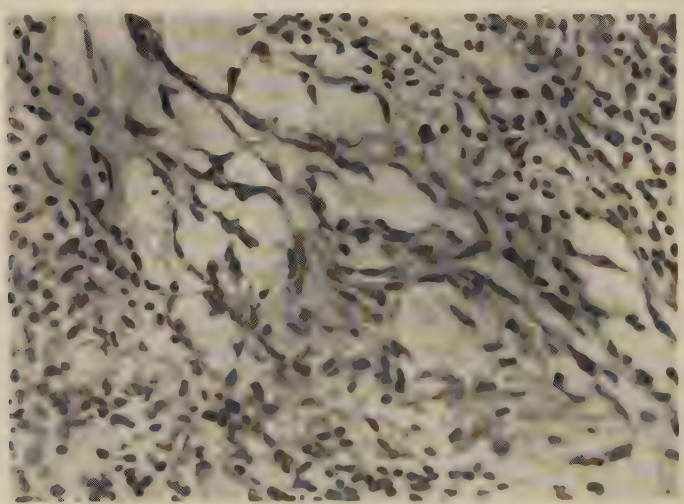

Fig. 3.—High power photomicrograph (skin tumour) showing loosening of a network of tumour cells with formation of primitive lumina. At the margins are infiltrates of lymphocytoid cells.

between the tumour cells forming a syncytial mesh which in some areas was so loose that a sponge-like appearance resulted. This was especially seen at the margins of the tumour (Fig. 3).

Deep in the corium were many irregularly outlined dense cell masses invading the subcutaneous fat. In these regions the growth presented a rather undifferentiated aspect, suggesting a spindle-cell sarcoma. Cell outlines were indistinct and in some places the tumour cells were packed so closely that a syncytium appeared to be present. Mitotic figures were scarce. Adjoining the tumour cell masses were infiltrates of lymphocytoid cells, showing variations in the size and staining of their nuclei.

Lymph node.—The section from the cervical lymph node showed the lymphatic tissue almost completely replaced by compact masses of spindle-shaped cells invading the periglandular fat and the perivascular lymph sheaths. Vascular lumina, lined by tumour cells, were only occasionally noted.

Post-mortem Histology.

Skin.—In general this resembled the biopsy, but there were more haemorrhages, more intra- and intercellular oedema and only a few lymphocytoid cells. A silver stain (Gömöri) showed delicate argyrophil fibres around some of the newly formed vascular lumina.

Lungs. —The nodular areas showed dense masses of tumour cells, similar to those in the skin tumour, but much less differentiated. Formation of vascular lumina could not be seen. A striking feature was the concentration of the tumour cells around the pre-existing vessels. A silver stain revealed in some places the outlines of the alveoli, the lumina of which were filled by tumour cells.

Liver.—Nests of tumour cells similar to those in the skin were chiefly localized in the connective tissue of the portal space and from there infiltrating between the liver cells. In some areas, the gross appearance of which corresponded with the dark red nodules, large sinuses were present, filled with red blood cells and lined by a single layer of endothelium. Histologically these areas represented typical cavernous haemangiomata which however did not show any obvious relation to the tumour cell infiltrates.

The spleen and the enlarged lymph node of the lung hilum showed appearances which were in general similar to those already mentioned. In the vertebra some large cavernous blood sinuses were seen in close relation to the tumour cell masses.

Comments.

From the literature it appears that the value of the term haemangio-endothelioma is open to doubt. Some authors support the view that angioplastic tumours do not originate from the normal endothelial cells lining previously existing capillaries, but from undifferentiated mesenchymal cells. They therefore call these tumours angioplastic sarcomata (Winkler, 1933 ; Bonstein, 1954) or angioplastic reticulo-sarcomata (v. Albertini, 1955).

According to Stout, some cases which have been reported as " benign metastasizing haemangioma " should also be classified in this group.

Kaposi's sarcoma, haemangiopericytoma, haemangioperithelioma and gemmangioma (Orsòs) are generally considered to be separate entities and will not be discussed here.

Stout (1943) accepted the existence of a genuine haemangio-endothelioma and he stated that the following histological criteria are required for the diagnosis : " first the formation of atypical endothelial cells in greater number than are required to line the vessels with a single endothelial membrane and second

the formation of vascular tubes with a delicate argyrophilic framework of reticular fibers and a marked tendency for their lumina to anastomose ".

Most of the above-mentioned cases, including the case presented here, appear to fulfil these requirements and therefore it seems reasonable to consider them as a single entity.

The clinical appearance of haemangio-endothelioma of the skin is not characteristic. Usually it resembles a common haemangioma or a localized subcutaneous haemorrhage, but occasionally it may grow to the size of an orange.

In a relatively large proportion of the recorded cases the tumour was confined to the skin, but they have been reported in the breasts, liver, lungs, ovaries, bones, thyroid gland and other organs.

Secondary growths have often been reported. Some authorities regard them as probably multifocal systemic lesions, in preference to accepting a metastatic origin (Borst, 1928 ; Willis, 1948). The disclosure of small tumour emboli, lying free in the pulmonary vessels as in the case of Tibbs (1952) may on the contrary be an argument in support of a metastatic spread.

Regarding the origin of the tumour cells, Stout supposed, in accordance with Hedinger (1905) and Ewing (1941), that cell cords are formed by sprouting of endothelial cells from previously existing capillaries and that these cords may later become canalized. This process is comparable to the new formation of capillaries in granulation tissue. Trauma, with subsequent formation of granulation tissue, occasionally might be a factor in the causation of these tumours (Stout, 1943 ; Sweitzer and Winer, 1936 ; Hueper, 1942 ; Caro and Stubenrauch, 1945).

Other authors (Winkler, 1933 ; Bonstein, 1954) suggested that the development of the vascular lumina in these tumours occurs in a way which closely resembles the embryonal histogenesis of capillaries. Immature multi-potent mesenchymal cells (angoplasts) might differentiate to angioblasts which form the islets of Pander. These become canalized and thus vascular lumina appear, lined by endothelial cells, surrounded by a fibrous framework and occasionally containing blood cells. Some sarcomatous stimulus is required to induce the malignant variant of this process, and, in accordance with this hypothesis, these authors use the term angioplastic sarcoma.

Von Albertini (1955) emphasized that the tumour cells of the so-called haemangio-endothelioma form a reticulum and do not show endothelial features. He believes that undifferentiated reticular connective tissue, still being close to the primitive mesenchyme, may be the origin of the tumour—hence his term reticulosarcoma angioplasticum.

Bolck (1952) does not support the terms endothelioma and haemangio-endothelioma. After studying a large number of endotheliomata, he came to the conclusion that the most important feature of all types of endothelioma

was the formation of primitive lumina (*innere Hohlraüme*) in a sponge-like network of undifferentiated mesenchymal tumour cells (*sponchiochym*); further differentiation may take place, resulting in the appearance of a vascular lumen, lined by flat endothelial cells with a delicate fibrous framework (as occurs in haemangio-endotheliomata) but in other cases "epithelial lumina" might appear with a single-layered cubic cell lining or lumina resembling synovial sheaths, having a thick fibrous wall.

Bolck's ideas on the histogenesis of the vascular lumina in these tumours agree with our findings in the present case. In some parts of the peripheral portion of the scalp tumour the tumour cells appear to form a sponge-like network; this is looser in places, the meshes coalesce and a sort of softening appears around which the neighbouring cells join together. The detached cells within these areas disappear and in this manner a primitive lumen arises, lined by tumour cells (Fig. 3). The following stage shows the flattening of these lining cells, which develop an endothelial appearance and lose their connections with the other tumour cells.

Several degrees of differentiation can be noted, successively represented by the syncytium-like areas, the sponge-like network, the primitive lumina and the vascular lumina. These vascular lumina are the most differentiated structures. The cavernous-haemangiomatous tumours in liver and vertebrae, showing large blood-filled sinuses and lined by a single-layered endothelium, might be interpreted as highly differentiated angioplastic growths which may have formed communications with pre-existing capillaries.

The histopathological findings in our case appear to support the views of Bolck, particularly with regard to the diagnosis of the haemangio-endotheliomata and to the origin of the tumour cells and the vascular lumina.

Summary and Conclusions.

A case of malignant haemangio-endothelioma (angioplastic sarcoma) of the scalp is reported and a short review of the literature is given concerning nomenclature and histogenesis.

In the present case it could be demonstrated that the formation of primitive lumina took place in those areas in which the undifferentiated mesenchymal tumour cells had formed a loose sponge-like network.

From our case and also from the literature it appears that the assumption by some authors that these tumours arise from the highly differentiated endothelium of normal previously existing capillaries is disputable.

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THE PROSPECT OF PSORIASIS.

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" Relapses are very common in psoriasis, so that a single attack, without any subsequent return of the disease, is a very exceptional occurrence. It is impossible to say, in any particular case, how long the disease will last, whether a relapse will occur, or for what period of time the patient will remain free from psoriasis." This was Hebra's (1868) opinion and little has happened in the past century to enable us to improve upon his statement. Morris (1902) considered that " the best security against relapse is the completest possible removal of all remnants of the disease." This view was supported by Ingram (1954). Romanus (1945) found that 20% of patients treated at the time of onset remained clear for twenty years or more, whereas no more than 8% remained clear for such periods if treatment were delayed until twelve months after the onset of the disease. Whether this is the result of treatment or selection of cases is debatable.

This investigation was conducted in order to assess the factors influencing the prognosis of psoriasis and its response to treatment. In the five years, 1949 to 1953, 918 patients suffering from psoriasis attended the Rupert Hallam Department of Dermatology, Sheffield. A letter was sent to all and 546 attended for review. An additional 38 patients who attended were rejected ; most of them suffered from pustular eruptions of the palms and soles, a condition whose relationship to psoriasis is uncertain. Of the remainder, 50 could not be traced, 6 had died and the rest either wrote saying they could not attend, or failed to reply.

An investigation of this sort cannot be entirely accurate since the 30% who, having been traced, failed to attend, might include many in whom the disease was slight or had cleared. Therefore, the conclusions which follow are probably gloomier than fact.

Sex Incidence.

Of the 918 patients recorded, 44% were male ; of those attending for review, 43·5% were male, corresponding closely to Ingram's (1954) figure of 41%. Patients whose psoriasis was considered severe on account of its extent and persistence totalled 116 (21%) but the incidence of severe cases in each sex was almost identical (male 21%, female 21·2%).

Age of Onset.

The age of onset was predominantly between 5 and 15 years (Fig. 1). This is not a false impression due to the number of children attending, since 20% of the cases attended hospital in the fourth decade and 18% in the fifth. Several were still making the pilgrimage to hospital, having had psoriasis for over 60

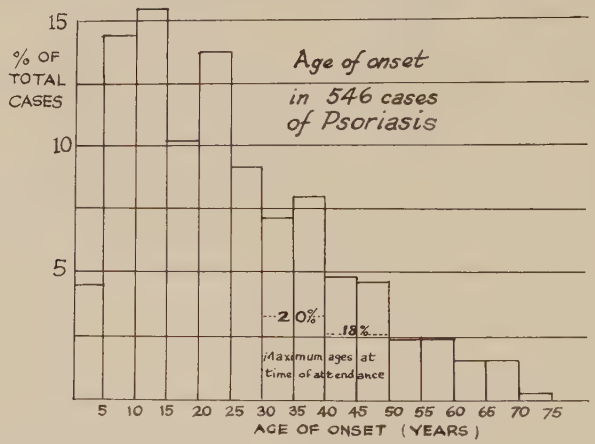
15
% OF TOTAL CASES
10
5
Age of onset in 546 cases of Psoriasis
20%
18%
Maximum ages at time of attendance
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75
AGE OF ONSET (YEARS)

Fig. 1.

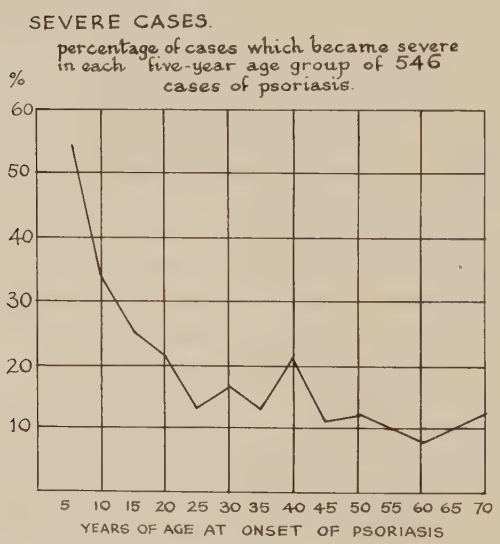
SEVERE CASES.
percentage of cases which became severe in each five-year age group of 546 cases of psoriasis.
%
60
50
40
30
20
10
5 10 15 20 25 30 35 40 45 50 55 60 65 70
YEARS OF AGE AT ONSET OF PSORIASIS

Fig. 2.

years. At the other extreme, one child was seen eight years ago at 3 weeks of age with psoriasis which, with one short remission, has persisted ever since.

Romanus (1945) found that women tended to develop the disease earlier than men, but in the present series there was no significant difference in the age of onset.

When the incidence of cases which ultimately become severe was calculated in each onset-age group, it was observed that most severe cases developed psoriasis in early childhood (Fig. 2). It follows that the earlier psoriasis develops, the more severe and persistent it is likely to become.

Family History.

A family history of psoriasis was obtained from 34% of patients. Ingram, also dealing with a Yorkshire population, records a figure of 33·9%. When the incidence was plotted of a positive family history in each onset-age, a much higher incidence among the under twenties was revealed (Fig. 3). There are several possible interpretations; it may merely be that old men forget.

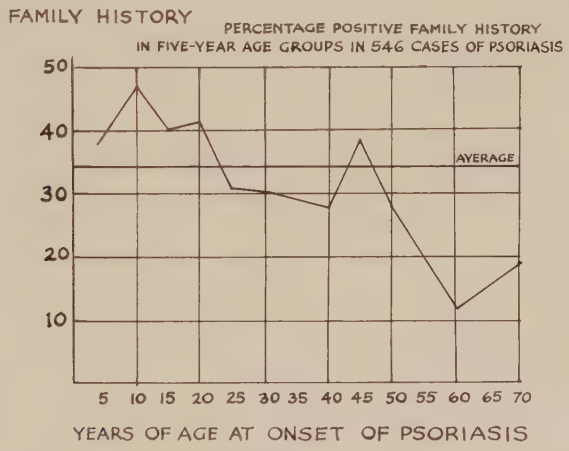

Fig. 3.

It is more tempting to suppose that a family tendency favours early development of the disease. Since psoriasis which develops early in life is more likely to be severe and persistent, it is probable that a positive family history increases the likelihood of the psoriasis being severe.

In 116 cases suffering from severe psoriasis, the incidence of a positive family history rose to 41·5%. More than one member of the family was recorded as suffering from psoriasis in 67 cases (12·5%) and, of this number, 22 patients (30·5%) were suffering from severe persistent psoriasis. Since severe cases constitute only 21% of the total it seems reasonable to suppose the stronger that the family tendency, the more severe psoriasis is likely to be.

Romanus also investigated the question of severity and family history. He found that those who were consistently free from psoriasis had a lower incidence of psoriasis in the family, though he found no relation between family history and the extent of the disease. He postulated a modified dominant inheritance in this condition. In one family encountered in this survey,

psoriasis was linked with the character of red hair. The six affected members of three generations were those with red hair.

Guttate Psoriasis.

Thirty-seven patients first attended hospital with guttate psoriasis, the majority being children, as might be expected. In 50%, an attack of tonsillitis was recorded as the precipitating cause. It is generally considered that acute guttate psoriasis has a better prognosis. As far as the initial attack is concerned this is undoubtedly true, since only 10% of cases failed to clear within a few months. Yet in the short period of this review, nearly half had had a recurrence. Moreover, when specifically questioned, 4·6% of cases who developed psoriasis later in life could recall a transient attack of guttate psoriasis in childhood.

Rheumatic Fever.

The association of guttate psoriasis with streptococcal infection is well established. Occasionally, it is seen in association with other diseases precipitated by the same cause, such as acute nephritis. An uncommon story is that of a patient now aged 58, who had three attacks of rheumatic fever in twenty years, each accompanied by transient guttate psoriasis ; later, she developed chronic psoriasis.

It is difficult to establish the incidence of rheumatic fever in the general population. In the notification areas of Bristol, Sheffield, Grimsby and Lincoln, the incidence of verified rheumatic fever in 1948 and 1949 was between 0·04% and 0·05% of the child population (Report of Ministry of Health, 1949). Osman (1925) found that cases of rheumatic fever formed 1·1% of admissions to Guy's Hospital. It is reasonable to suppose that the incidence of rheumatic fever which is detected in the total population is not more than 1%, but its incidence in this series of psoriatics was 3%. It is worth reflecting that climatic conditions which favour the development of rheumatic fever are those which also accompany a high incidence of psoriasis.

Much has been written about the association between psoriasis and arthritis and there is wide variation in the incidence recorded. In this series, the total incidence of rheumatoid and psoriatic arthritis was 2%, which is less than the 3·1% found in the general population (Kellgren *et al.*, 1953). Of these patients, only 3 (0·6%) could be classified as suffering from psoriatic arthropathy.

Precipitating Factors.

When afflicted with a skin eruption, it is usual for patients to attribute it to some cause, likely or unlikely. It was therefore surprising to find that 69% of these patients with psoriasis could not suggest any possible reason for the onset of their disease.

Infection in the form of an attack of tonsillitis was the commonest precipitating factor and occurred in 7·3%. Half of these were under the age of 14. Other infections closely preceded the onset of psoriasis in 5·5%. Injury was followed by psoriasis in 6%, in most of which psoriasis first appeared on the site of the injury. A shock was closely followed by psoriasis in 3·7% of cases, while 5·5% were going through a period of worry at the time of onset of the disease. Emotional stress of an acute or chronic nature was therefore blamed less often than infection for the onset of the disease, though many more patients considered that emotional factors influenced the course of the eruption. The stresses of puberty or the menopause were considered responsible for the onset of the disease in 7 cases.

Pregnancy.

Pregnancy has an influence on the course of the disease in many cases, but its effect is not constant. In this series, 43 women suffered from psoriasis during pregnancy. Pregnancy and parturition had no effect on the course of the disease in 14%, 33% of patients became clear of psoriasis while pregnant and in 21%, the disease became worse. In 44%, parturition was accompanied by relapse of psoriasis, whether it had cleared during pregnancy or not.

The Course of Psoriasis before Treatment.

In 400 cases, the disease had been present for long enough for one to form an impression of its course before treatment at hospital. Half had psoriasis sufficiently extensive to warrant treatment with ultra-violet light. However, there was no significant difference in the periods of freedom from lesions before treatment in mild cases as compared with the extensive. Seventy-four per cent. of these 400 cases had never been clear of psoriasis. Of these who had remissions, the majority had been free for intervals of only six to twelve months and only 8% had been clear for five or more years.

Response to Treatment.

Two hundred and sixty patients were treated with tar baths and ultra-violet light. The details of this regime have been given by Ingram (1953). In Sheffield, Ingram's routine is varied in that dithranol is used only in the later stages of treatment in resistant cases. The patient soaks for ten minutes in a warm bath to which liquor picis carbonis is added (4 ounces to 20 gallons of water). During this time, scaly lesions are scrubbed with a soft nail brush. After drying, the patient is exposed to ultra-violet light for a suberythema dose, the time of exposure being increased by 30 seconds each day. The lesions are then anointed with the following ointment: Liq. picis carb., 40 minims, hydrarg. ammon. 10 grains, paraffin. moll. flav. to 1 ounce.

The limbs and trunk are covered with stockinette. This process takes half an hour each day and the patient can then return to work. Mild lesions in the scalp may respond to a lotion of liq. picis. carb., spirit and water in equal parts. More severe lesions need an ointment such as: Acid. pyrogallol., 10 grains, acid. salicyl., 15 grains, acid. carbol., 10 grains, ung. hydrarg. oxid. flav. to 1 ounce. Mild cases may

clear after three weeks of this treatment but more severe cases require up to six weeks.

Of the 260 patients who attended for their first course of ultra-violet and tar-bath therapy, only 4·6% derived no benefit. The same percentage improved slightly. Of the total, 141 (54%) improved greatly, but in most cases small resistant areas remained on the knees, elbows or scalp although the rest of the body was clear. The lesions cleared completely in 95 (37%). Recurrence was rapid in some cases and of the 95 which cleared completely, 11 (11·5%) relapsed in four weeks. The majority were free for only six months and only 3 were free for five or more years.

The benefit which these cases derived is best assessed by the number who wished to have another course of treatment. In the time under review, 98 patients returned for a second course, 55 patients for a third course and some had four or more treatments. In those who relapsed quickly, ultra-violet light seemed to become gradually less effective. Of those who attended for a second course of treatment, having been completely cleared by the first, 45% were improved but not cleared. In the third course, 62% of those who had been cleared by previous treatments failed to lose their lesions completely. A number of patients' psoriasis responded repeatedly to ultra-violet light treatment but relapsed in a very short time. These were then given daily treatment until the skin was clear and then generalized ultra-violet light once weekly for an indefinite period. Fourteen of a total of 17 patients so treated found that they remained either clear or relatively free from lesions for much longer than usual. Those able to afford to buy their own lamps to use in this way had similar success. Time, accommodation and staff make a prophylactic ultra-violet light service difficult to run in hospital, but if local authorities set up such services they would be a boon to psoriatics.

The geographical and racial distribution of psoriasis was reviewed by Ingram (1954) who quoted Sequeira and others to support the theory that psoriasis is uncommon in warm sunny climates. On the other hand, Fergusson (1948) stated that it is difficult to see how the impression ever gained currency that psoriasis improved, or seldom occurred under tropical conditions. This divergence of opinion may be due to experience in different countries. Tropical humid heat might aggravate existing psoriasis but in my experience the more pleasant climate of the Middle East caused psoriasis to be rare. Fourteen of the patients under review had served in the tropics and subtropics. Ten were completely free from psoriasis during that time and in most it was the only time since the onset of the disease that they had been clear.

Conclusion

Confronted with a young patient, what can we say about the prospect of psoriasis? The younger the age of onset and the more numerous the other

affected members of the family, the more severe and persistent the disease is likely to be. Much can be done to alleviate or even clear the condition with intensive light therapy, but its effects are temporary and freedom from the disease for periods of five or more years is unusual. In young patients with extensive psoriasis, the disturbance caused to their mode of life justifies recommending them to seek their fortune in a sunnier climate.

Summary.

Of 918 patients with psoriasis who attended during a 5-year period, 546 were interviewed and their case histories analysed.

It was concluded that the earlier in life psoriasis develops, the more severe and persistent it is likely to become. Also, a family tendency to psoriasis favours the early development of the disease and increases the probability of its being severe.

The response of 260 patients to treatment with tar baths and ultra-violet light was good. Over a third were completely cleared of lesions but the duration of freedom was about six months in most cases and few were free for more than five years.

The response of those patients who had served in tropical and subtropical climates supported the view that deprivation of sunlight is a factor of major importance in psoriasis.

I wish to express my thanks to Dr. H. R. Vickers and Dr. I. B. Sneddon for allowing me to see their patients and for their encouragement. Also to Mrs. B. Stockley for secretarial work and Mr. France of the Photographic Department, Grimsby General Hospital, for the diagrams.

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NORTH BRITISH DERMATOLOGICAL SOCIETY.

Glasgow, 10 October 1957.

Ichthyosiform Erythrodermia (Brocq).—Dr. A. Girdwood Fergusson.

A girl aged 7 years.

History.—A bullous eruption with redness of the skin was present at birth. Since then bullae have continued to appear, especially on areas subject to mild trauma. They are usually large, flaccid and superficial and heal without scarring. During the past few months they have appeared less often and occasionally have been completely absent for some weeks. Parakeratotic thickening has become marked in places and erythema has diminished.

Family history.—No known skin disease.

Examination.—General ichthyosis, more marked in the flexures where a well-marked warty thickening of the superficial layers is present (Fig. 1). Skiagram of chest—normal. Total and differential blood counts—normal.

Fig. 1.

Histology (Dr. J. A. Milne).—Bullous congenital ichthyosiform erythrodermia.

Comment.—This case illustrates the spontaneous regression of bullous lesions which may occur. The effect of hypnosis on the warty thickening will now be investigated in view of the results obtained by Mason (1952) and by Mullins *et al.* (1955).

References.

Mason, A. A. (1952) *Brit. med. J.*, ii, 422.
Mullins, J. F., Murray, N. and Shapiro, E. M. (1955) *Arch. Derm. Syph., Chicago*, **71**, 265.

Infective Dermatitis becoming Neurodermatitis Circumscripta.—Dr. J. C. P. Logan.

A man aged 47 years.

History.—The condition started as itchy spots on both elbows in July 1952 and was followed by a sensitization eruption on the hands and face. It proved most resistant to treatment, the patient having been in the dermatological ward four times in one year, twice transferred from a fever hospital with a face eruption simulating erysipelas. A favourable response was noted within a few weeks of commencing hypnosis and this response has been maintained.

Past history.—He first suffered from a skin eruption while he was a prisoner of war in Germany in 1943, when his face was affected.

Examination before hypnosis.—There is a generalized erythemato-squamous eruption.

Psychiatrist's report (Dr. A. F. McLean).—This patient's disability is connected with emotional disturbances attributable to his war experiences. At the fifth hypnotic session I suggested that the left leg would improve and he told me later that the left leg was not itching any more although the right leg was itching. After eleven sessions local applications, except to the face, were suspended for a time. Nocturnal dreams were first successfully suggested in the thirteenth session and, reminded of them under hypnosis, he abreacted many upsetting war experiences at several sessions. He was discharged from hospital after thirty-one hypnotic sessions.

Although his skin condition has remained active in localized patches, what encourages me is his freedom from gross relapse necessitating re-admission within a few days of discharge. I think that the hypnotic abreactions are much more likely to be related to his lasting improvement than the hypnotic suggestions of skin healing and mental calmness.

Lichen Striatus.—Dr. J. C. P. Logan.

A woman aged 28 years.

History.—An itching eruption on the left leg of one year's duration following domestic emotional upset.

Past history and family history.—Nothing of note.

Examination.—A papular, scaly, lichenified eruption is arranged in a linear fashion along the posterior aspect of the left leg.

Histology (Dr. J. A. Milne).—There are small foci of micro-vesiculation of the epidermis covered by a parakeratotic scale. Deep to these lesions there are dense focal collections of lymphocytes and histiocytes arranged perivascularly. The histological appearances, while not diagnostic, are in keeping with the clinical diagnosis of lichen striatus.

Progress.—The condition is regressing without treatment.

Dermatitis Herpetiformis of Infancy.—Dr. P. R. Derblay for Dr. A. Girdwood Fergusson.

A girl aged 4½ years.

History.—A non-itchy eruption appeared at the age of two years following an attack of measles. In spite of treatment with liquor arsenicalis, dapsone, prednisone and sulphapyridine, the eruption has recurred several times.

Family history.—Not relevant.

Examination.—Grouped, bullous, pustular, crusted and erythematous lesions on the shoulders, lower abdomen, groins, thighs and genitalia with some mouth lesions.

Full blood count normal apart from a mildly raised eosinophil count (6%). Blood chemistry normal. Urine normal.

Treatment.—There was an initial response to sulphapyridine 0·5 g. *b.d.*, but a maintenance dose of 0·5 g. *t.i.d.* appears to be required to diminish activity significantly. Locally aureomycin cream (3%) and ichthyol (1% in calamine liniment) had some good effect. Hydrocortisone ointment (2·5% in non-greasy base) had the effect of reducing crusting but did not influence the activity of the eruption.

Comment.—A most resistant case in which only relatively high dosage of sulphonamide gave results. The failure of hydrocortisone ointment to effect any real improvement is in contrast to the findings of Alexander (1957), but note the initial absence of itching in our case. In our experience, such cases are not uncommon in Scotland, but the poor response to sulphapyridine is exceptional.

Reference.

Alexander, J. O'D. (1957) *Brit. J. Derm.*, **69**, 280.

The following cases also were shown :

Pityriasis Lichenoides Acuta, Necrobiosis Lipoidica Diabeticorum (2).—Dr. A. Girdwood Fergusson.

Atopic Eczema (2), Chronic Pyoderma.—Dr. J. C. P. Logan.

Urticaria Pigmentosa (5), Dermatitis Medicamentosa.—Dr. W. A. Dewar.

TRANSVAAL DERMATOLOGICAL SOCIETY.

Pretoria, 28 September 1957.

Acne "Neonatorum."—Dr. G. H. Findlay.

A girl aged 20 months. At 10 months several comedones and slowly evolving papulo-pustules developed over the malar regions, some eventually discharging abundant pus and leaving pock-like scars. There had been no previous administration of drugs, nor local application of oils.

Mantoux (intermediate strength P.P.D.) : Neg.

No signs of virilization. Treated for 3 months with tetracycline syrup, 125 mg. daily, with suppression of papules and suppuration. No biopsy has been done.

Systemic Lupus Erythematosus (Section of Dermatology, Univ. of Pretoria).

A woman aged 38.

She has had joint pains for 20 years, laparotomy for abdominal pain 18 years ago, and a dermatosis for 13 years. There have been several acute relapses with high fever, pleuritis, and coma.

ACTH, cortisone and meticorten have been given since early in 1951. For 1 year she has shown a Cushing-like syndrome.

Discussion.

Dr. I. J. Venter : This patient has been given prednisone in the recent past in doses varying from 15-30 mg. daily. Even on the higher dose her symptoms were often poorly controlled. Medrol (6-methyl prednisolone) was given for 10 days—4 mg. *b.d.* with favourable response. Thereafter 4 mg. daily was given and a mild relapse followed. Improvement followed resumption of the original dose. At this stage our supplies of the drug were exhausted.

Clinical results included notable wellbeing, loss of Cushing-like picture (face and abdominal swelling less), disappearance of headaches, improvement of the skin without menstrual upset.

She is now back on meticorten.

Fanconi's Anaemia with Skin Manifestations (Section of Dermatology, Univ. of Pretoria).

Case 1.—A boy aged 8.

One and a half years ago he began to develop progressive weakness with epistaxis and facial pallor. Increased pigmentation over the body followed. Hypoplastic anaemia with slight spleen enlargement was established, and splenectomy was performed without benefit. The mother has a dark skin, but other children have normal skin. Examination shows a small head, pigmentation in the covered areas, with macular depigmentation. Biopsy of skin shows basal-cell melanin increase with chromatophore pigment.

Case 2.—A boy aged 7, not related to Case 1.

Anaemia and tiredness started 7 months ago. The time of onset of skin darkening is unknown. Hypoplastic anaemia has been found, and there is a ventricular septal defect. He is microcephalic.

He has a congenital renal anomaly with raised blood urea. His sister aged 18 also had Fanconi's anaemia, mistaken for Addison's disease, and died recently of bronchopneumonia.

Discussion.

Dr. G. Findlay : We have seen 5 cases in this hospital and the diagnosis has been made on dermatological grounds. These patients show a pseudo-vitiligo in the pigmented areas, sometimes of a " rain drop " pattern. The outstanding features are a pale, small face with maximum pigmentation around the pelvis.

Dr. Loewenthal : Is there facial paresis in the elder patient ?

Dr. Findlay : We have noticed this and the question of mastoiditis being the cause has been considered.

Confluent Reticulated Papillomatosis (Gougerot and Carteaud) (Section of Dermatology, Univ. of Pretoria).

Bantu woman, young adult.

Duration of changes on chest—6 months, with slow increase.

Family and personal history negative. No symptoms.

Histology showed wavy epidermis with hyperkeratosis.

Discussion.

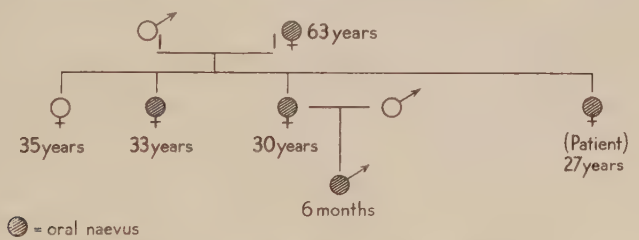
Dr. R. Kooij : Although several white patients have been seen with this complaint, this is the first Bantu patient in whom we have seen this condition. She is now undergoing a spontaneous remission and the appearance makes it obvious why pityriasis versicolor is an important differential diagnosis.

Congenital and Familial Epithelial Naevus of the Oral Mucosa.—Dr. C. M. Ross.

A woman aged 27.

When she was 12 her dentist drew her attention to the lesion in her mouth and it has since remained stationary. Her mother and her second and third sisters, one of whom is hirsute, are affected. Her eldest sister is normal. The 10-months-old son of the third sister is affected.

Seven siblings of the patient's mother are normal. No consanguinity of grandparents. Other members of the family were examined by Dr. F. P. Scott in Bloemfontein and I am indebted to him for help with the family tree. For the last year the patient has had arthritis (type undetermined) of the hands.



On examination the sides of the patient's tongue are milky and three are small whitish patches on its under surface. The floor of the mouth, the hard and the soft palate and the fauces are not involved but the mucosa of the cheeks is opalescent and folded, giving in places the impression of a striated and lichenified surface and in others the impression of wartiness. This condition continues down into the gingival folds and some way up on to the outer surface of the gums, being the most marked at the level of the molars. To touch, the surface is slightly roughened but there is no underlying induration or fixation. At places where the mucosa is folded, the folds can be stripped off painlessly and without bleeding.

Histologically, a thick layer of vacuolated cells overlies a few layers of normal rete malphighii and a basal layer which is well defined. There is some prolongation of the rete pegs and a few mitotic figures are present in the basal layer. There is no significant infiltrate in the underlying connective tissue.

BOOK REVIEWS.

The Reticulo-Endothelial System.*

The contributors to this symposium covered a wide range of scientific work, and all aspects of present knowledge concerning the functions of the reticulo-endothelial system in health and disease were very adequately covered.

There is now practically no branch of medicine which is not concerned in some degree with the important concept of the reticulo-endothelial system, and the report on this symposium will appeal to many readers.

The opening chapter on the morphology and physiology of the reticulo-histiocytic cell by A. Policard forms a concise and useful basis for what is to follow. Readers will note the preference of Policard for the term " histiocytic " rather than " endothelial " cell. The section by Ch. Sadron deals with the principles of the determination of the shape and dimensions of globular proteins in solutions taking as an example seralbumen. As might be expected this chapter is largely concerned with mathematical considerations and formulae.

A reminder of the physiological aspects of the symposium is contained in the section dealing with phagocytosis of particles and the factors controlling this process. The physico-chemical factors governing phagocytic functions also receive attention. Here also the importance of variation of particle size on rate of clearance receives attention. Coupled with this is the effect of previous blockage in such organs as the liver. The following sections deal with various aspects of reticulo-endothelial cell metabolism : Byers *et al.* on the normal disposal of cholesterol and Vanotty providing the arguments in connection with the metabolism of iron. The section on disposal of red blood corpuscles (haematoplasia) by the reticulo-endothelial system, written by Miescher, is particularly clearly elucidated. The final sections deal with the relationship of the reticulo-endothelial system to the defence mechanisms against infection. The opening chapter of this section by Miles, largely representing the author's own views, met with general agreement in the discussion.

Cruchaud and Tekul suggest that cortisone has a modifying influence on antibody distribution by increasing the proportion of cellular antibodies to those circulating.

The book is well produced and with the references given will lighten considerably the labours of anyone wishing to bring himself up to date with all aspects of this difficult subject.

J. O. O.

Treponematoses.†

This monograph of some 270 pages is the result of studies carried out at the International Treponematoses Laboratory of Johns Hopkins University under the auspices of the World Health Organization. It is, however, more than an account of researches, and covers a wide review of the subject.

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* *Physiopathology of the Reticulo-endothelial System.* A Symposium organized by the Council for Internal Organizations of Medical Sciences. Edited under the direction of B. N. Halpern by B. Benacerraf and J. F. Delafresnaye (1957). Pp. xii + 317; illustrated. Oxford : Blackwell Scientific Publications. Price 45*s.*

† *Biology of the Treponematoses.* Thomas Bourne Turner and David H. Hollander (1957). Pp. 273, 21 illustrations. World Health Organization. Monograph Series No. 35. Price £1 10*s.* 0*d.*

Treponemal diseases constitute a real health problem, in some countries a major one. The authors pay an important tribute to the late Sir Alexander Fleming in the statement " Penicillin has rendered the control of Treponemal diseases a practical possibility for the first time ; their complete elimination is now no longer a fantastic objective."

The contents are in two parts, one being concerned with the general biology of treponemal infections, and the other with the comparative study of strains of treponemes.

Although laboratory work in treponemal diseases is easier than in leprosy or cancer, since for the most part treponemes can be " cultured " in susceptible animals, the work would be even more simplified if cultivation *in vitro* were possible. The reader may be a little puzzled by reference to the cultivation of treponemes, since the text does not stress that this means *in vivo* multiplication in susceptible animals, rather than true cultivation *in vitro*.

Attention is given to the added difficulty of animal experiments in these diseases owing to the wide content of antibiotics in artificial feeding stuffs, either by direct addition or through the intermediary of antibiotic-fed animal tissue.

Important advances have been made in regard to the antibody evoked by *T. pallidum*, and it seems clear that the Wassermann antibody differs from the immobilizing and other treponemal antibodies, a point of considerable clinical importance in the evaluation of the later serological tests for syphilis. It is concluded that " the evaluation of a given serological test must, in the final analysis, be based squarely on the diagnosis of individual patients, and as determined by exhaustive clinical and epidemiological investigations."

The combination of penicillin and cortisone receives support from experimental work, and it seems that " in the treponematoses of man cortisone may be used to prevent undesirable reactions from penicillin, and penicillin to prevent undesirable reactions from cortisone."

A justifiable plea for continued surveillance of freshly isolated strains of *Treponema pallidum* to detect the possible emergence of penicillin-resistant strains is made.

In view of the fact that some illustrations are included, the omission of electron microscope appearances of treponemes is to be regretted.

This monograph contains most important reviews on the subject of immunity phenomena supported by much experimental work. The authors are workers of international repute, and the monograph can be confidently recommended to anyone interested in any aspect of the wide subject covered by the title.

J. O. O.

CURRENT LITERATURE

AN EXAMINATION OF SKIN FROM PATIENTS WITH COLLAGEN DISEASE UTILIZING THE COMBINED ALCIAN BLUE PERIODIC ACID SCHIFF STAIN. Edward P. Cawley, J. F. A. McManus, Charles H. Lupton, Jr., and Clayton E. Wheeler (1956) *J. invest. Derm.*, **27**, 389.

Alcian blue electively stains structures containing acid mucopolysaccharides but the combination with periodic acid Schiff is advantageous in demonstrating their relation to other tissues.

Material from 6 cases of discoid and 4 of disseminated lupus erythematosus, 4 of dermatomyositis, 5 of morphoea, 4 of generalized scleroderma and 5 of periarteritis nodosa was examined by means of this stain. A characteristic network of material taking this stain usually shows up in dermatomyositis and disseminated L.E. J. H. T. D.

PRESIDENTIAL ADDRESS: DERMATOLOGIC RESEARCH: AN OFFICE PROCEDURE? J. L. Callaway. (1957) *J. invest. Derm.*, **27**, 215.

To illustrate the possibilities of individual research away from the university clinic, the President mentions a couple of observations of his own.

In atopic dermatitis instead of the erythema normally produced by the tetrahydrofurfuryl ester of nicotinic acid, you get pallor. It is a pity that there were not a few more cases of nummular eczema among the controls especially as "50% of the 2" gave the white reaction. The power of the skin to react is quickly exhausted, so Trafuril is no good to those who are looking for an up to date hair-restoring erythema for alopecia areata. J. H. T. D.

METHODS OF TESTING EFFECTS OF FUNGISTATIC COMPOUNDS IN LACQUER. R. H. Kaden. (1957) *J. invest. Derm.*, **27**, 221.

If the inside of the Petri dish lid is painted with 2% halogenocyclohexane in nail varnish a seeded plate fails to grow; and a streak of varnish under the medium creates a wide zone of inhibition. A coverslip varnished only on one side does something or other, which is not clear either from the text or from the illustration, when it is placed varnish side (?) up on the surface of a growing culture. J. H. T. D.

STUDIES IN PALLAESTHESIA: PALLOMETER THRESHOLD VALUES IN 60 PROVED NORMAL SUBJECTS. S. Goldblatt. (1957) *J. invest. Derm.*, **27**, 227.

Scientific pallometry demands that over a range of frequencies between 70 and 980 c.p.s. the amplitude of vibration of a 1 sq. cm. applicator be measured to within 3 significant figures of 1 μ. And having achieved this we can then sit back and speculate on the reasons why patients with acne, contact dermatitis and pityriasis rosea require distinctly abnormal amplitudes at certain frequencies only.

[Complete with photograph of author and his attractive assistant happily engaged in pallomancy.] J. H. T. D.

THE SPECIFICITY OF THE KVEIM REACTION. C. T. Nelson and B. Schwimmer. (1957) *J. invest. Derm.*, **28**, 55.

During 7 years the Kveim test was performed 335 times with the same antigen (presumably the authors' own DM–1).

Positive reactions occurred in 53 of 72 cases confirmed by biopsy and in 17 of 29 firmly diagnosed on clinical and skiagraphical grounds; in only one of 99 cases of tuberculosis and one of 35 cases in which the initial tentative diagnosis of sarcoid was later abandoned: and this particular case turned out to be one of berylliosis. Reactions were negative without exception in 18 normal controls and in 82 patients having other diseases. Of the 19 histologically positive negative reactors it was considered fair to say that 16 were in an inactive phase of the disease; otherwise there seemed to be no very certain relationship between activity and reactivity.

J. H. T. D.

THE EFFECT OF GELATINE AND COLLAGENOUS TISSUE ON DERMATOPHYTE GROWTH P. H. Jacobs and A. L. Lorincz. (1957) *J. invest. Derm.*, **28**, 47.

Hydroxyproline, uniquely absent from the molecule of keratin, is known to inhibit the growth of dermatophytes in very simple media ; and 30% of gelatine added to conventional media does indeed check their growth a little. But the absence of this amino acid from keratin is not enough to explain why dermatophytes tend to be confined to that tissue *in vivo*.

Anyhow 4 common dermatophytes grew equally well on both surfaces of sterilized discs of skin and in media whether laced with keratin or with powdered collagen. J. H. T. D.

CONTACT DERMATITIS WITH SPONGIOSIS AND INTRA-EPIDERMAL VESICULATION IN THE ACANTHOTIC SKIN OF GUINEA-PIGS. R. L. Baer, S. A. Rosenthal and C. Sims. (1957) *J. invest. Derm.*, **27**, 249.

The underlying notion is that in allergic dermatitis the antibody-antigen reaction takes place in the dermis and that epidermal changes, eczematoid or otherwise, are merely secondary.

One of the reasons why one does not always get a true eczematoid reaction in guinea-pigs and other experimental animals is that the rete is too thin. Have it thicker by using a recently healed burn or do your experiment with an allergen (e.g. paraphenylenediamine) which provokes acanthosis and you may then get your vesicles.

(Is there not too much stress on histological proof of vesicles ? They are not always conspicuous in sections of the most vesicular-looking eczema.) J. H. T. D.

MITOTIC RATE OF GINGIVAL EPITHELIUM IN TWO AGE GROUPS. J. Meyer, A. S. Marwak and J. P. Weinmann. (1957) *J. invest. Derm.*, **27**, 237.

It seems that the mitotic rate varies only between 5 and 15 per 1000 cells counted.

Is the finding that younger subjects had fewer mitoses to be correlated with an observation that epithelial tissues replace themselves more rapidly in old than in young mice, or with the possibility that patients even of the Illinois College of Dentistry are liable to take their false teeth out when they have their dinner ? J. H. T. D.

PAPER CHROMATOGRAPHIC SEPARATION OF FLUORESCENT MATERIALS IN NORMAL RAT HAIR. G. Rebell, A. Mahvi and J. H. Lamb. (1957) *J. invest. Derm.*, **27**, 259.

The body hair of albino rats is fluorescent. Moreover it is not perfectly white like that of most albino animals ; it is in fact distinctly yellowish.

Both the yellow colour and the fluorescence can be extracted with boiling water ; and most of this paper is concerned with an attempt to identify the material by paper chromatography. J. H. T. D.

STUDIES ON DOPA REACTION. I. SIMPLE TECHNIC FOR DOPA REACTION. II. EFFECT OF CHEMICALS ON THE REACTION. Susuma Iijima and Kazu Watanabe. (1946 and 1947). *J. invest. Derm.*, **26**, 235 and **27**, 1.

The authors claim to have achieved a 'semi-*in vivo*' (sic) reaction with material fixed in formalin. Among 38 substances tested, p-thiocresol and sodium diethyl-dithiocarbamate inhibited the reaction completely at the final concentration of 1/6000 M, and hydroquinone, monobenzylether of hydroquinone, 2-mercaptobenzthiazole, cysteine ethyl ester, sodium cyanide, copper sulphate, ammonium molybdate and silver nitrate, at the final concentration of 1/600 M.

The material is stated to have been axillary skin surgically removed in the treatment of osmidrosis. We look forward to reading about work on lacrimal glands excised for the relief of grief. J. H. T. D.

THE RESPONSIBILITITES OF THE MEDICAL PROFESSION IN THE USE OF X-RAYS AND OTHER IONIZING RADIATION. United Nations Scientific Committee on the Effects of Atomic Radiation. (1957) *J. invest. Derm.*, **28**, 1.

A statement couched in the double plus ungood duck-speak that is becoming increasingly familiar as authority attempts to extend, by means of superstitious fear or otherwise, its influence to one section after another of human activity.

It is not difficult for anyone to see that an X-ray straying among reproductive cells might sometimes maim instead of killing ; though, at any rate until recently, the danger cannot have been very obvious to the radiologists, who have no doubt been emboldened by the scarcity of double-headed monsters among their own posterity. But what of the pedoscope, the community

chest-X-ray, not to mention the countless roentgens lavished on the self-limiting follicular dystrophies of adolescence ? Either the circulation carries radioactive influences (I presume that we have so far been spared the cyclotron) from a distant irradiated site to the gonads or it does not.

This learned body might well have saved its breath to remind us of the overwhelming advantages of X-ray treatment with the juice turned off. Is the therapeutic effect all that much inferior ; and can it not be repeated, with increasing duration of exposure if desired, as long as the patient demands it ? J. H. T. D.

DEFICIENT WATER-BINDING IN PATHOLOGIC HORNY LAYERS. P. Flesch and E. C. Jackson Esoda. (1957) *J. invest. Derm.*, **28**, 5.

Besides keratin the horny layer has 20% of water soluble materials, mainly aminoacids, representing the non-keratogenic products of epidermal metabolism.

After extraction with ether, scales callosity and scrapings of the normal horny layer were pulverized and watery extracts of the powder precipitated with acetone. The hydrophilic capacity of the keratin does not vary with its source, but the acetone precipitate from psoriatic scales had a water uptake of 40% as compared with the 115% of callosity.

The aminoacid and sulphydryl content of various fractions of the horny material derived from normal skin, callosity, psoriasis and ichthyosiform erythrodermia show such important differences that a simplified table is here given.

	Normal horny layer.	Callus.	Psoriasis.	Ichthyosiform erythrodermia.
Amino acid content of :				
Raw material	378	178	110	80
Aqueous extract	304	123	40	25
Insoluble keratinous residue	70	67	65	57
Sulphydryl content of insoluble keratin residue	Not estimated	17	180	46

On this evidence the authors urge that it is more correct to regard psoriasis as a disease with an abnormal horny layer than as a disorder of keratinization, the keratin fibre itself not having yet been shown to be abnormal. J. H. T. D.

AMINOSTILBAMIDINE—A FUNGISTATIC AGENT. IN VITRO SENSITIVITY STUDIES, TISSUE FLUORESCENCE—DISTRIBUTION AND THERAPEUTIC TRIALS IN COCCIDIOIDOMYCOSIS. D. S. Kushner, I. Snapper, M. Sendeir and S. McMillen. (1957) *J. invest. Derm.*, **28**, 69.

Twenty-five mcg./ml. of aminostilbamidine inhibits *Blastomyces dermatitidis* and *Coccidiodes immitis in vitro* but has no effect on Cryptococcus, Nocardia or Candida.

Liver damage in mice begins at 10 mg./kg.

Five patients were treated with 150 mg. daily, one of them attaining a total dose of 10 g. Three with meningeal lesions failed to benefit but 2 patients in whom the disease was solely pulmonary appeared to improve. But spontaneous remissions are not unknown in this disease and it happens that these two each received rather less than 3 g.

Fluorescence studies confirmed a normal tissue distribution of the drug but the fluorescence of microbes seen in sections indicates that they do not altogether escape its influence.

J. H. T. D.

THE EXPERIMENTAL PRODUCTION OF OTITIS EXTERNA IN MAN. W. B. Shelley and E. T. Perry. (1957) *J. invest. Derm.*, **27**, 281.

Biopsies of the auditory meatus were performed in no less than 79 normal adult male volunteers who had been subjected to obturation of the canal, lining it with adhesive plaster, application to its surface of various irritants primary and allergic ; and the findings are illustrated with superb photomicrographs.

The significance however of the conclusions is not so obvious as the care and skill with which the work has been performed. Since the lesions produced are stated to have been rapidly self-limiting in most cases, surely the statement that " all instances of otitis produced by halowax recovered *after local therapy* (reviewer's italics) although discomfort and objective signs of the dermatitis persisted for several weeks in 2 (out of 11) men " betrays some confusion of ideas—possibly due to a complete neglect of the possibility that the spontaneous disease may be endogenous and that spontaneous recovery from the effects of chemical trauma is not necessarily accelerated by therapy. J. H. T. D.